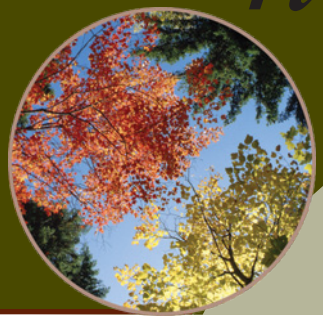
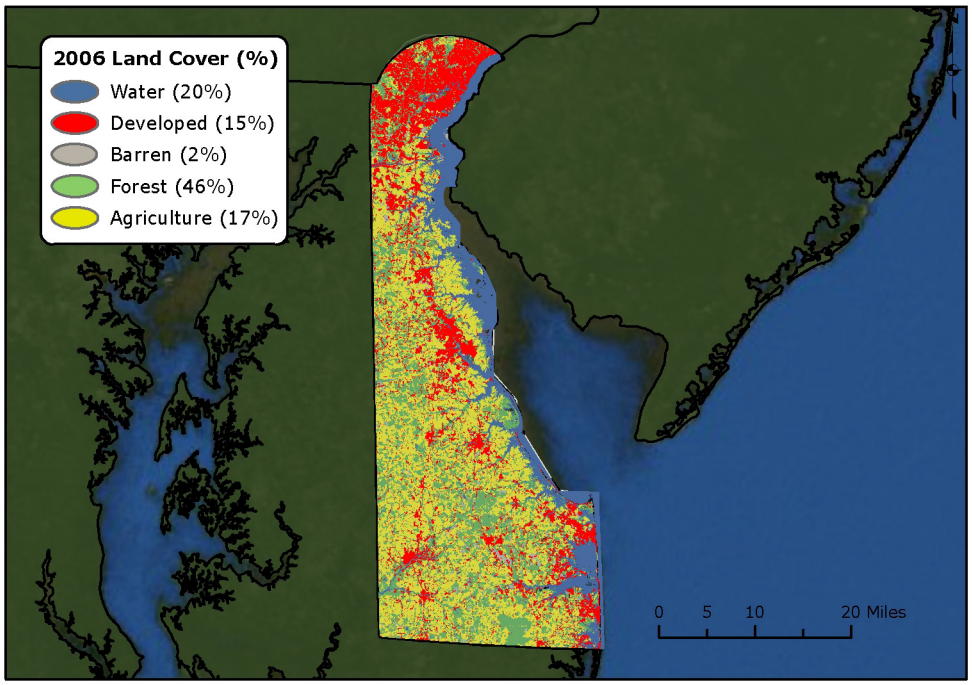
2011 Forest Health highlights

DELAWARE



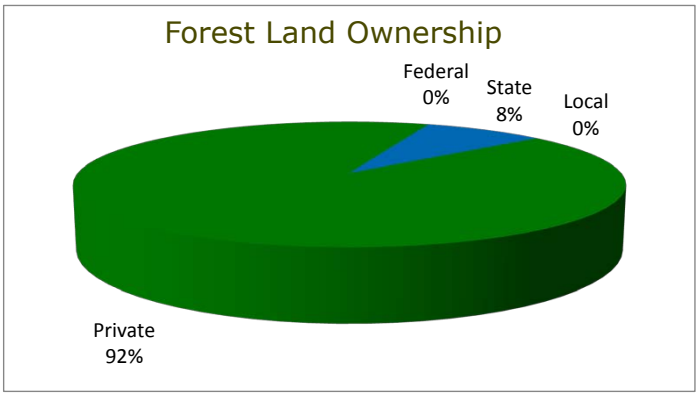
The Resource

Delaware's forests presently cover approximately 371,000 acres, roughly one-third of the land area in the State. Delaware has experienced a rapid conversion of forests and agricultural lands to residential and other urban uses since the 1980s.



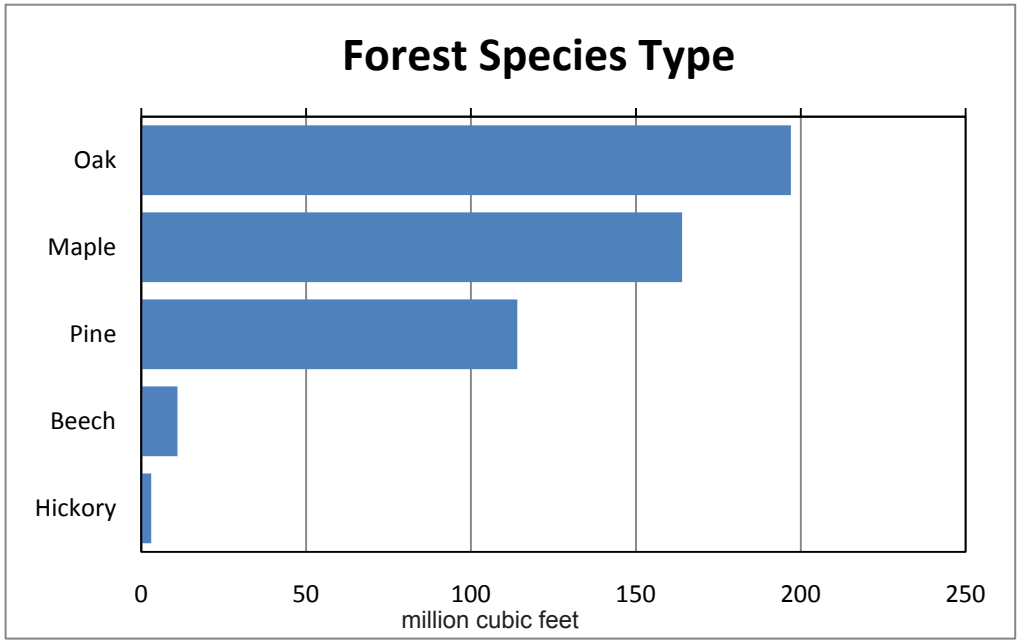
Weather Conditions

Delaware again experienced a cool, wet spring in 2011, ideal for anthracnose disease. However, the summer months brought drought for the fifth year out of the last six. The summer drought will likely lead to continued expression of stress-related pest issues in coming years.



Forest Health Programs

State forestry agencies work in partnership with the U.S. Forest Service to monitor forest conditions and trends in their State and respond to pest outbreaks to protect the forest resource.



Aerial Surveys

No aerial surveys were made of Delaware in 2011.

Forest Pest Issues

Gypsy Moth

No significant defoliation due to gypsy moth was observed in 2011. This marks the continuation of a downward trend in gypsy moth activity in southern Sussex County, and the second consecutive year in which no defoliation was observed. The wet spring may have led to increased larval mortality caused by the parasitic fungus *Entomophaga*.

Southern Pine Beetle (SPB)

No SPB infestations were reported in 2011. Delaware again participated in the Southwide Southern Pine Beetle Pheromone Study. Beetle counts from four pheromone-baited Lindgren funnel traps indicate the population is at a low or declining level. It is worth noting that Delaware had several extremely cold nights with temperatures around zero degrees Fahrenheit during each of the last three winters.

Emerald Ash Borer (EAB)

Ash represents only about 1 percent of Delaware's rural forests but is a significant component of the urban forest in some areas. In 2011, biosurveillance was used to survey for EAB using colonies of the Buprestid-hunting wasp *Cerceris fumipennis*. More than 140 Buprestid prey were collected from *Cerceris* wasps returning to their nests at 12 sites. Additionally, staff from the Delaware Forest Service helped the Plant Industries Section service purple prism traps throughout the State. Visual surveys were also carried out at rest areas on Interstate 95 and Route 1. EAB was not detected.

This hole was made by a Cerceris fumipennis *wasp.*

Sirex Woodwasp

(*Sirex noctilio*)

Sirex noctilio presents a threat to loblolly pine, the mainstay of the forest products industry in southern Delaware. In 2011, 18 Lindgren traps baited with a *Sirex noctilio* blend were hung at seven sites. Sirex has yet to be detected in Delaware, although native Siricids were collected.

18 Lindgren traps were set up at Sirex noctilio *survey sites in 2011.*

Other Insects

In 2011, service foresters reported light to moderate damage from bagworm moth, scale insects, eastern tent caterpillar, borers, and fall webworm.

Disease Concerns

Hypoxylon Canker

(*Hypoxylon atropunctatum*)

Widespread mortality due to Hypoxylon canker was again seen throughout the State in 2011. This pathogen causes disease only in stressed trees. Several consecutive hot, dry summers predisposed trees to disease development, and the effects are still being seen. While many species were affected, oaks, especially southern red, white, and black, were most damaged. **Service foresters again reported that this was the single most common damaging agent of oaks inspected during calendar year 2011.**

Other diseases

Moderate damage and limited mortality were reported in 2011 from several rust diseases, fire blight, anthracnose, canker diseases, and *Armillaria* root rot.

Forest Health Monitoring

Deer Exclosures

Delaware's white-tailed deer herds benefit from near-ideal habitat and mild winters. As a result, deer populations have reached very high densities. Deer browsing has been documented as a factor affecting understory composition and ingrowth in hardwood forests. A study was initiated in 2005 to quantify the browse effect. Eighteen fenced exclosures have been installed in oak forests throughout Delaware. Measurements are taken at each exclosure and its accompanying control plot. Early results indicate significant differences between fenced and control plots, in as little as 3 years, in areas where deer density is greater than 50 per square mile.

A deer exclosure in Delaware.

Bacterial Leaf Scorch

Bacterial leaf scorch (BLS) has emerged as a serious threat to forest health in both urban and rural forests throughout the Mid-Atlantic region. Surveys in 2006 and 2007 found that BLS is common in red, pin, scarlet, and black oak throughout Delaware. Since little research has been carried out to assess the effects of BLS in traditional forests, permanent plots were established in 2008 at a study site at Blackbird State Forest in New Castle County. Ninety red oaks in an affected woodlot were surveyed, tagged, and located with GPS equipment for a long-term study. Followup visits were made in 2009 and 2010, with accompanying ELISA lab work through the University of Delaware and the West Virginia Department of Agriculture. A second study site was established in 2010 at Taber State Forest in Kent County. In coming years, data from these two BLS research studies should begin to shed light on disease progression and the economic costs associated with BLS.

References

Land Cover Map:
U.S. Geological Survey. 2011. 2006 National land cover dataset. Sioux Falls, SD.

Forest Land Ownership, Forest Species Type:
U.S. Department of Agriculture, Forest Service. 2009. Forest resources of the United States, 2007. Gen. Tech. Rep. WO–78. Washington, DC. 336 p.

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